

WHITE. (J. A.)

Influence of Naso-Pharyngeal Growths,  
Obstructions and Hypertrophies  
upon the Hearing,  
With a Few Cases in Point.

— BY —

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Senior Surgeon of the Richmond Eye, Ear and Throat  
Infirmery.

*Read before Virginia State Medical Society, and Reprinted  
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Influence of Naso-Pharyngeal Growths,  
Obstructions and Hypertrophies upon  
the Hearing, with a Few Cases  
in Point.\*

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By JOSEPH A. WHITE, M. D.,

Senior Surgeon of the Richmond Eye, Ear and Throat Infirmary, Richmond, Va.

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*Read before the Virginia State Medical Society, September 9, 1884.*

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About eighteen months ago I wrote a short paper (by request) for the Richmond (Va.) Academy of Medicine, embodying known facts about "Naso-Pharyngeal Catarrh and its Treatment," viewed from the standpoint of my own experience, in order to call the attention of the local medical profession to the great prevalence of this trouble. Richmond, particularly, has fully its share, because of the quantity of irritating dust constantly floating in its atmosphere, and this dust I claimed to be one of the most active and prolific causes of naso-pharyngeal irritation. This, added to the fact that our climate is subject to very sudden and startling changes of temperature, with great dampness and moisture in winter, made a very good nursery for naso-pharyngeal catarrh.

But in that paper—a very imperfect one from want of time and space—I merely referred to the influence of catarrh and

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\*Reprint from the Virginia Medical Monthly, February, 1885.



its accompanying hypertrophies on the sense of hearing. I wish now, however, to bring to your notice, more particularly, this influence and the importance of attention to the nose and naso-pharynx in cases of defective hearing. Four or five years ago I read before this Society a short paper on "Catarrhal Deafness," with the same object, but it differed considerably from the present pages.

In naso-pharyngeal catarrh the deafness which so frequently accompanies it may be due to any one of four causes:

First. To extension of the inflammatory process along the mucous lining of the Eustachian tube, or catarrh of the tube and tympanum.

Second. To direct obstruction of the mouth of the tube by hypertrophic mucous tissue.

Third. To interference with the normal ventilation of the tube by nasal stenosis.

Fourth. To loss of normal action of the palato-tubal muscles—the so-called "parietic deafness."

(1st.) In "catarrh of the tube and tympanum" the mucous lining of the tube and drum participates in the chronic inflammation, becomes thickened, the calibre of the tube is narrowed, and hearing is impaired by loss of motion in the drumhead and ossicles, resulting both from rarefaction of the air in the tympanum and the inflammatory changes. Such cases, if seen before radical changes (as, *e. g.*, stiffening of the articulations of the ossicles, bands of adhesion in the tympanum, etc.,) have taken place, can have the hearing restored by treatment of the naso-pharyngeal disease and systematic inflation of the drum.

(2d) Where we have direct obstruction of the mouth of the tube, it may be due to hypertrophy of the pharyngeal tonsil, or to posterior hypertrophy of the erectile tissues over the lower turbinated bones, or to post-nasal vegetations (so-called adenomatous growths), particularly those on the posterior wall of the pharynx, with hyperplasia of the mucous folds. I have seen these latter cases in children, where the deafness had persisted for years, with occasional improvement in warm weather, have the hearing almost perfectly restored by a removal of the obstructions, and a short course

of treatment of the tubal and tympanal complication. Now, although my experience with a large number of cases, since my attention was first called to the existence of these growths, bears out my assertion of deafness being a frequent result of vegetations in the upper pharynx, with the authority of Mackenzie, Woakes, Meyer, Voss, and others to support it, there are some who hold a different opinion. Dr. Beverley Robinson, of New York, read a paper on this subject at the recent meeting of the American Laryngological Association; and, although I have not seen his paper, the journal reports of its discussion show that his experience does not agree with mine in the frequent production of deafness from this cause. It may be that he does not make a routine practice of testing the hearing of all his cases that have adenoid growths, or hypertrophy of the pharyngeal tonsil, and he may therefore frequently overlook defective hearing when it exists. I have often found this effect by tests when the patients made no complaint of it, and did not seem aware of any defect in their hearing.

(3d.) Interference with tube ventilation by nasal stenosis causes deafness by obstructing nasal respiration, cutting off the normal current of air along the inferior nasal meatus, and thus preventing the automatic capillary attraction of the Eustachian tubes upon the air current. Nasal stenosis, partial or complete, may be due to hypertrophy of the erectile tissues over the turbinated bones, either anteriorly or posteriorly; to polypi; to post nasal vegetations; to hypertrophy of the pharyngeal tonsil; to growths and deviations of the septum; to posterior thickening of the septum; to naso-pharyngeal tumors; to general hypertrophy of the nasal mucous membrane; and to rhinoliths.

(4th.) The last form of deafness from "paresis of the palato-tubal muscles" was first described by Weber-Liel, my former preceptor in Berlin, under the name of "progressive deafness," and he claimed it to be of central, reflex, or vasomotor origin. This valuable publication did not meet with the reception it deserved. Subsequently we are indebted to Woakes for considerable labor in this same direction. In 1872, I wrote an article, under the heading of "Tenotomy of

the Tensor Tympani Muscle," for the *Baltimore Medical Journal*, which was, as far as I can learn, the first publication in this country on the subject—Weber-Liel claiming that, on account of the deficient power of the tubal muscles the unopposed action of the tensor tympani acted deleteriously by drawing in the drumhead and impacting the stapes in the oval window, thus producing greater deafness, tinnitus and giddiness. Ultimately this resulted in its permanent contraction, with ankylosis of the chain of ossicles, and absolute deafness. Hence its tenotomy before such permanent contraction took place was of great importance. The congestion and dilatation of the blood-vessels of the naso-pharynx, which often precede and always accompany catarrh, if it extends to the nutrient vessels in the sheaths of the motor nerves of the palato-tubal muscles, will necessarily, by the pressure of these vessels on the nerves, enfeeble their motor-power and cause deficient action of these muscles. This vaso-motor influence is probably the explanation of the simplest forms of parietic deafness.

In the slighter forms, this deafness is curable by early attention to the naso-pharyngeal trouble, faradization of the tubal muscle, and inflation of the drum. In the more pronounced forms it is very intractable, and in the majority of cases absolutely incurable, going on to profound deafness in spite of treatment.

Here allow me to say that I do not wish to be understood as stating that all cases of nasal and naso-pharyngeal troubles are accompanied by deafness; but I do say that all cases of middle ear disease, whether acute or chronic, suppurative or non suppurative, are accompanied more or less by naso-pharyngeal changes; and I may also add that every case of nasal obstruction resulting in "mouth-breathing," and all cases of obstruction of the *lower nasal meatus*, even where the air-current can still pass through the upper passages, will, sooner or later, become more or less deaf if the obstruction is allowed to remain.

From the foregoing remarks, you can see the importance of a most minute examination of the nose and naso-pharynx when a patient complains of defective hearing; *vice versa*, the

importance of testing the hearing, especially of children, when there is any interference with free nasal respiration.

To examine the nose and naso-pharynx necessarily requires a perfect knowledge of the anatomy and relations of the parts on the one hand, and a familiarity with the post-nasal mirror and its rhinoscopic pictures on the other. Merely opening the mouth and depressing the tongue will rarely tell us anything unless we meet with hypertrophied tonsils, or large pharyngeal granulations and redundancy of the pharyngeal mucous membrane. If we find one or all of these, and have defective nasal respiration, we may be sure we have also important pathological changes beyond the reach of our unaided vision.

Anterior hypertrophy of the erectile tissue over the turbinated bones, deflections of the septum, outgrowths from the cartilaginous portion of the septum, and nasal polypi can be usually diagnosed by direct inspection of the anterior nares with a nasal dilator and a good light.

But growths from the posterior portion of the septum, thickening of the mucosa on either side of the vomer, hypertrophy of the posterior ends of the turbinated tissues, hypertrophy of the pharyngeal tonsil, and lymphoid vegetations of the naso-pharynx are only to be diagnosed by the post-nasal mirror. Posterior rhinoscopy is not of much service in little children, and here the "tactus eruditus" of the educated finger comes into play. By putting one arm around the child's neck, with the fingers on the cheek, so as to prevent its biting the examining finger, by pressing the soft tissues between the teeth at each attempt to bite, we can pass the finger up behind the uvula and explore the post-nasal cavity.

Vegetations feel like a bunch of worms; hypertrophy is firm and smooth. In larger children and adults, when I have any difficulty in getting a post-nasal view, I pass along the lower nasal meatus into the pharynx the smallest-sized flexible bougie, with a small wire in it to render it firm, and draw it out of the mouth, in the same way that Bellocq's canula is used. I then withdraw the wire and tie the two ends of the bougie together over the upper lip, thus getting a good view of the naso-pharynx by this forward traction on

the soft palate. I have been using this method for a number of years, and have never yet encountered a case of stenosis so great that I could not pass this little bougie.

The rhinoscopic appearances are unmistakable. In the normal image, the posterior wall and vault of the pharynx, smooth and free from irregularities; on either side the cartilaginous projections of the Eustachian tubes and their orifices, with the depressions behind them (*fossæ* of Rosenmüller); the sharply-defined, clean cut, oval openings of the posterior nares, separated by the septum, with the projections from without inwards of the turbinated bones—these make up a picture that, once clearly seen, is easily remembered. Any deviation from this is an abnormality requiring attention.

Just at the vault of the pharynx, behind the upper end of the septum, we may see a smooth lump projecting downwards—sometimes rounded or oval, sometimes pyramidal. This is the pharyngeal or *Luschka's tonsil* in a hypertrophied state; for, like the faucial tonsils, whenever it is at all noticeable, it is more or less hypertrophied. If you will recall your experiences of throat examinations, you will probably agree with me in saying that in a healthy throat the faucial tonsils are no more to be seen than if they had no existence, and my experience teaches me the same thing about the third tonsil. When hypertrophied, as with the faucial tonsils, it may be *dense and firm*, resembling a fibroid growth, either single or lobulated; or *soft*, forming a reddish granular mass, the so-called adenomatous tissue, which hangs down, hiding the sharp upper contour of the post-nasal openings, and sometimes covering the Eustachian tube orifices.

Again, the upper oval may be sharply defined; and lower down, projecting out from their lower segment towards the Eustachian tube orifices, we may see what looks like a mulberry, large or small, as the case may be, or, sometimes like a smooth, firm tumor. This is the *hypertrophy of the inferior turbinated tissue*.

Again, we may find the septum puffed out on either side, giving it a thickened appearance, due to hypertrophy of the muco-periosteum over the vomer; or, the post-nasal opening

may be occluded by a smooth, firm growth, springing from the septum—a *fibroid tumor*; but this is rarely met with.

More rarely still, we may find the naso-pharyngeal space partially or entirely filled with a growth springing from the muco-periosteum of its roof, and entirely occluding one or both post-nasal openings, and pressing on the Eustachian tube orifices.

Sometimes several of these pathological conditions will be present in the same case. All of them must be done away with to restore normal nasal respiration and prevent or diminish existing deafness.

*Nasal polypi*, although producing nasal stenosis, do not act so deleteriously upon the hearing as the above changes, because they usually spring from the upper or middle meatus, and what breathing room remains is in the lower and most important channel, but I have had patients with polypi to complain of occasional ear-ache. It is difficult to fix any certain causation for these growths and hypertrophies in the nose and naso-pharynx, though they occur during and possibly as a result of the changes that take place in the mucous membrane and its annexa in chronic naso-pharyngeal catarrh. The early occurrence and history of adenoid tissue points to heredity as a factor in its production, and it frequently results from the exanthematous diseases. I have quite a number of cases on my record-book of "suppurative aural catarrh" resulting from scarlet fever, which showed the complication of adenoid vegetations in the naso-pharynx, and I have observed that the treatment of the local ear disease is more rapidly and favorably efficacious after the removal or destruction of this tissue. In fact, I consider the treatment of any naso-pharyngeal trouble quite as important in suppurative as in non-suppurative middle ear disease.

The treatment of these growths and hypertrophies means their extirpation. My main dependence in such treatment is the *galvano-cautery*, for there is no case to which it is not applicable—a remark which does not so readily apply to the knife or cold snare, which I sometimes make use of.

*Anterior turbinated hypertrophies*, I destroy by removal with Jarvis' snare, or, better, by burning longitudinal furrows in

them with a galvano-cautery knife. In the absence of these, I have found glacial acetic acid a useful local application in shrinking them. When quite soft, I have known glycerole of tannin sufficient for the purpose. I have also seen them subside spontaneously where they existed in connection with posterior hypertrophies or adenoid tissue, when the latter were removed.

In *posterior turbinated hypertrophies*, I usually apply the galvano-cautery or Jarvis' snare. The latter instrument I have found more useful here than in anterior hypertrophies, because it does not give the same amount of discomfort as when used to remove the latter.

*Deflections of the septum*, if only slight, should be let alone; but if sufficient to cause stenosis, any accompanying hypertrophies should be removed, the deflected portion perforated with a punch or button-hole forceps, originally designed by the late Dr. Bolton, of this city, (the original forceps being now in the possession of Dr. Brock, of Richmond,) and subsequently modified by Dr. Steele, and then forced back into proper position by plugs or by laminaria flat tents. These I have found very useful for dilating purposes in the nostrils, frequently an apparently marked hypertrophy disappearing under the influence of the pressure alone.

*Outgrowths* from the septum can be cut off by a bistoury or snare, or shrunken by the galvano-cautery. Caustic applications are of no service. I removed, a short time ago, a fibroid as large as a hickory nut, springing from the septum, and the deafness in the case was evidently caused by the resulting nasal stenosis. I have appended the case to this paper. In another case, also accompanied by chronic adhesive processes in the tympanum, a cartilaginous projection from the septum had, by its pressure on the turbinated structures, set up ulceration. I cut off the projection with a bistoury and re-established nasal respiration with the *laminaria* dilators, when very marked improvement followed the aural treatment, which up to that time had only negative or transient results.

*Adenoid or lymphoid vegetations*, I always remove with the cutting forceps as far as possible, and then burn with the gal-

vano-cautery or with chromic acid. Although these vegetations usually appear in childhood and disappear about adolescence, there are exceptions. I have two patients under treatment at present, in one of whom the trouble *did not appear* until he was twenty-one or twenty-two years of age; and in the other, a young lawyer of Richmond, who has suffered from nasal stenosis more or less all his life, and although nearly thirty years old, I discovered post-nasal vegetations to be the cause of his trouble. Their removal with forceps and cautery is resulting in a very rapid recovery. But even if it were true that they always disappeared about adolescence, the fact that their presence may interfere with ventilation of the drum, or may keep up the catarrhal condition that, by extension to the drum, will produce "deafness," is sufficient ground to insist on their early extirpation, because the deafness may in time become incurable from the radical changes that would take place in the tube, drum, and drum-head.

In all post-nasal operations, except in small children, I tie up the palate, as above suggested, so as to see as much as possible what I am doing. We cannot watch the cutting forceps when applied, but we can see very well *where* to apply them. In using the snare, however, or galvano-cautery knives or points, I can see the instrument the whole time; and the same may be said of applying *chromic acid*, which I generally use to the stumps of any growth after operation.

No other caustic I have ever used has given me such entire satisfaction as *chromic acid*, because it has a decidedly caustic effect on the parts, does not spread when properly applied, and is almost free from pain. If there is any marked pain, it is instantly relieved by a warm-water douche or application. That, when improperly used it may produce symptoms of poisoning; or, if swallowed, will cause irritation of the stomach and vomiting; or, because workers in bichromate of potash sometimes have ulceration of the nasal mucous membrane and perforation of the septum, are no objections to its proper and judicious use. Poisoning from its use is easily prevented by carefully touching the parts with warm water as long as the water becomes tinged. A simple warning to the patient not to swallow during the application is

sufficient to prevent its entrance into the stomach; and as to the ulceration and perforation of the septum, we have the same results among workers in arsenic and in the manufacture of feathers and mirrors from the use of bichloride of mercury. In fact, anything that causes ulceration of the mucous membrane over the septum will produce a perforation, because the cartilage derives its nutriment from its mucous covering; but the perforation is limited in extent and no deformity results. If such workmen would wear cotton or wool pellets in the nostrils, there would be no such result from their work. All persons working where there is irritating dust or fumes should wear such pellets as a prophylaxis against catarrh and its complications.\*

The treatment of the deafness resulting from these various causes should be conducted on ordinary otological principles—cleansing of the naso-pharynx by antiseptic sprays, with appropriate applications to combat the catarrhal condition; inflation of the drum cavity by Politzer's bag or by the catheter; internal medication, according to the accompanying symptoms and constitutional affections; regulation of the digestive and uterine functions; and sometimes change of scene and release from work and mental worry. But it can be readily perceived that without first relieving the nasal obstruction by operative interference, we can not apply these principles of treatment. We can not apply cleansing sprays, nor use Politzer's bag, with any satisfaction, and frequently we cannot even pass the catheter.

The cleansing sprays I use are composed of "*Listerine*," made by Lambert & Co., of St. Louis, Mo., diluted with an aqueous solution of bicarbonate of soda—one part to six. I consider Listerine a very valuable agent, because of its antiseptic and stimulating influence upon the mucous membrane. "*Chloral-thymol*," made by Mr. Blair, a chemist of Richmond, diluted in the same way, is also valuable, and the same may be said of carbolic acid, which I usually employ in the form of "*Dobell's Solution*." The two former are

\*I have also been using chromic acid as an application to papillomatous growths in the larynx for several years. In enlarged tonsils, however, I have tried it to no purpose.

pleasant applications, and both are undoubted germ destroyers—a fact of some importance in the selection of cleansing applications in catarrh. In some cases I spray the parts with a mixture of fluid Cosmoline and oil of eucalytus.

After a thorough cleansing of the naso-pharynx, I make use of Politzer's bag in both suppurative and non-suppurative ear trouble;—in the former to drive out the secretion from the drum cavity into the external meatus, when it can be readily removed, and the ear packed with boracic acid powder; in the latter, to prevent or break up intra-tympanal adhesions. I use the compressed air apparatus to produce more forcible inflation when the ordinary pressure from a Politzer bag is not sufficient to affect the adhesions.

In some cases, especially where intra-tympanal secretion can be diagnosed with certainty, or even when the symptoms and appearances lead me rationally to such a conclusion, I perform paracentesis of the drum-head and wash out the drum cavity. In more advanced cases, when no change in the hearing or the subjective symptoms results from the naso-aural treatment, if there is distressing tinnitus and giddiness, I have resorted to "tenotomy of the tensor tympani," but with little expectation of improving hearing. I only do it as a last chance when all other means fail me to relieve the noises or giddiness.

The following cases are added in exemplification of the facts stated in this paper:

CASE 1. *Fibroid of Septum Completely occluding Left Nostril, with accompanying Left-sided Deafness.*—A colored woman about fifty years of age came to the Eye and Ear Infirmary November, 1883, complaining of difficulty of breathing through the left nostril, with noises in the head and deafness in the left ear. The nostril was perfectly occluded by a smooth ovoid red mass, firm and resistant to the touch; the post-nasal mirror showed the mass just within the post-nasal opening, extending outward from the septum and pressing on the anterior lip of the Eustachian tube. After considerable difficulty, I succeeded in passing a wire around it, and by careful traction with a Jarvis instrument I succeeded in cutting through it. I was obliged, however, to remove the tumor with a hook, as it fitted so tightly in the nostril. It was as large as a hickory-nut, and was attached

by a broad base to the back part of the septum. Microscopic examination showed it to be composed of dense fibrous tissue. Cauterization of the place of attachment with chromic acid, and treatment of the aural trouble, resulted in a perfect cure.

CASE 2. *Aural Disturbance, Eye Trouble and Anomalies of Sensation in the Cheek due to Rhinoliths.*—Mrs. F——, forty-eight years of age, came to me some months ago, complaining of general discomfort on the right side of the face and head. She had for a long time suffered with alternate numbness and neuralgia of the right cheek, with occasional tinnitus aurium and slight defect of hearing, and with disturbance of vision and discomfort in the right eye. She had recently consulted an oculist in Baltimore, who prescribed glasses and some internal treatment. She could see better, but still had more or less discomfort in the eye. In my routine examination of the nose, I noticed a considerable stenosis of the right nostril, due to what seemed to be a swelling on the floor of the nostril, and to a projection or outgrowth from the cartilaginous septum, just above the swelling, the two abnormalities completely blocking the lower meatus. I first cut down through the mucous membrane covering the swelling on the floor, and my knife grated on a hard body. With probe and forceps I succeeded in enucleating what looked more like a piece of slag from an iron-furnace than anything else, weighing 14 grs., and which I took to be a rhinolith. In like manner I cut in and removed the projection from the septum, which proved to be a similar body, weighing 5 grs. Both seemed to be encysted or sacculated, as it were, with a growth of healthy-looking tissue over them. Their removal, followed by a two-weeks' after-treatment, resulted in entire relief of all the symptoms, which have not appeared to this date.

CASE 3. *Naso-pharyngeal Tumor causing Complete Nasal Stenosis on Both Sides and Chronic Suppurative Aural Catarrh.* T. F——, twenty-one years of age, came to see me last June, to be treated for obstruction of the nose, associated with suppurative aural catarrh. The nasal obstruction had existed for about eight years, gradually growing worse. After nasal stenosis was established, he had frequent attacks of slight ear-ache and deafness, which developed into a chronic discharge from both ears. Anterior rhinoscopy showed both nostrils to be occluded by a firm red mass, which seemed to project into the nasal passages from the post-nasal space. On the right side examination with a probe could be made,

but any such attempt in the left nostril was followed by profuse and alarming hæmorrhage very difficult to arrest. Posterior rhinoscopy revealed the whole post-nasal space above the level of the soft palate to be completely filled by a smooth reddish mass, somewhat larger on the left side, and tapering off to the right, where the posterior part of the vault could be seen. After several ineffectual attempts, the wire slipping off each time I applied it, I succeeded in getting Jarvis' snare around the mass through the right nostril, and by keeping it close up to the septum, succeeded in cutting off a piece about the size of a hazel-nut, which re-established breathing through the right nostril. I then discovered the bomer to be driven considerably out of the median line by pressure from the left, thus narrowing the right post-nasal opening. I discovered that what I had removed was merely a projection, lapping around the posterior aspect of the vomer, from a tumor growing from the left side of the nasopharyngeal vault, the major part of which was tightly wedged in that side of the cavity, and passing into the left nostril. Every attempt at putting a snare around it was unsuccessful, and followed by dangerous hæmorrhage. So I tried to shrink it with the galvano-cautery by burning grooves in it, both anteriorly and posteriorly. After several applications this was successful to such an extent as to enable me to pass the wire snare of the galvano-cautery around it and cut it through close up to the vault, with the wire at a red heat. I think he may be saved from a return of the growth by an occasional application of the cautery to the seat of the tumor until complete healing has taken place. But the noticeable feature of his case, in exemplification of the statements in this paper, was that his deafness and ear trouble, which had formerly been intractable to treatment, disappeared rapidly after nasal breathing was re-established.

I could offer many other cases in point among those more commonly met with, but preferred to record the above three, as they are somewhat uncommon.

410 E. Grace St., Richmond, Va.





# BUFFALO

# LITHIA WATER

The Great Specific for Bright's Disease of the Kidneys, the Gouty Diathesis, Stone in the Bladder, etc.

**BRIGHT'S (CHRONIC) DISEASE OF THE KIDNEYS.**—Case of Mr. —, of Virginia, stated by Dr. G. Halsted Boyland, late Prof. Surgery, Balt. Med. Col., late Surgeon French Army (Decorated) Member Am. Med. Asso.

"Mr. — suffered with CHRONIC BRIGHT'S DISEASE OF THE KIDNEYS. The urine contained 20 per cent. of ALBUMEN, and was heavily loaded with CASTS. There were decided symptoms of URÆMIC POISONING, intense frontal headache, double vision, flushed countenance, general nervous irritability, and well marked CEREBRAL HYPERÆMIA.

"In this condition he was sent to the BUFFALO LITHIA SPRINGS, where he remained five weeks, drinking from eight to ten glasses per day of the water of Spring No. 2. At the expiration of this time the amount of ALBUMEN was reduced to a minimum, no casts could be discovered, there was an entire disappearance of the other threatening symptoms described and complete restoration of the general health."

**BRIGHT'S DISEASE OF THE KIDNEYS, GOUT, AND STONE IN THE BLADDER.**—Case of Mrs. —, stated by Dr. David E. Smith, of Bronxville, Westchester, New York:

"Mrs. — was subject to severe attacks of GOUT, a consequence of an inherited GOUTY DIATHESIS, followed after some time by STONE IN THE BLADDER. The limbs were very EDEMATOUS, so much so as to pit readily on pressure with the finger, leaving an indentation long after its removal. The urine was loaded with the URATES and TWENTY-FIVE PER CENT. ALBUMEN, and the microscope revealed CASTS, showing unmistakably, as I thought, BRIGHT'S DISEASE OF THE KIDNEYS. I prescribed the BUFFALO LITHIA WATER, Spring No. 2, which afforded prompt relief in the GOUTY AFFECTION, and resulted, in a few weeks, in the passage of a STONE three-eighths of an inch long by one-fourth of an inch in diameter. Under the continued use of the water the urine has been relieved of ALBUMINOUS IMPREGNATIONS, and restored to a normal condition; no CASTS can be discovered; the EDEMATOUS condition of the limbs has been relieved, and the general health of the patient, to a great extent, restored."

**BRIGHT'S DISEASE OF THE KIDNEYS, URÆMIC POISONING, &c.**  
A case stated by Dr. John W. Williamson, Boydton, Va.

"Several years since, when a resident of the State of Tennessee, my wife suffered from well-defined BRIGHT'S DISEASE OF THE KIDNEYS, resulting in URÆMIC POISONING. After a signal failure of every remedy suggested by several eminent medical men, and when her condition was regarded as well nigh hopeless, trial was made of BUFFALO LITHIA WATER, Spring No. 2. The result was relief from the threatening symptoms so prompt and decided as to be almost incredible to any but an eye-witness.

"She continued the use of the water for several months, making a complete recovery, having no return of the malady, and is now in good health.

"I will add that in diseases of this character I KNOW OF NO REMEDY, EITHER AMONG MINERAL WATERS OR MEDICINES, AT ALL COMPARABLE TO THIS WATER."

**BRIGHT'S DISEASE OF THE KIDNEYS.**—Case of Mr. —, stated by Dr. Z. M. Paschall, Oxford, N. C., Member of Medical Society of North Carolina.

"I spent the summer of 1880 at the BUFFALO LITHIA SPRINGS, and while there witnessed the marked beneficial action of this water in a case of BRIGHT'S DISEASE OF THE KIDNEYS. Mr. —, the sufferer, reached the Springs in a condition of emaciation and extreme exhaustion. The URINE was heavily charged with ALBUMEN, and its specific gravity decidedly below the healthy standard with general EDEMA and COMATOSE symptoms. In three weeks there was evident improvement, which continued during a stay of two months at the Springs, the URINE becoming free from ALBUMEN, natural both in appearance and quantity, and regaining to a great extent a healthy density and a disappearance of the DROPSICAL symptoms. In the meantime there was great improvement in the general health, the patient gaining some twenty-five pounds in weight, and leaving the Springs in a comfortable condition."

Water in cases of One Dozen Half-Gallon Bottles, \$5.50 per case.

Springs Pamphlet sent to any address.

**PURCELL, LADD & CO., - Richmond, Va.**

# BLAIR'S CHLORAL THYMOL.

- Is an active Germ-Destroyer and a thorough Deodorizer.  
It contains no violent poison.  
It has an agreeable odor.  
Its mode of use is simple.  
It can be applied with safety to diseased cavities and surfaces.  
It has given entire satisfaction as an antiseptic and deodorizer in lying-in rooms, in gynecology, in surgery, and in cases of cancer and urinary overflow.  
It has been used with marked success in preventing the spread of scarlet fever and diphtheria.  
In typhoid fever, erysipelas, and small-pox, its use is valuable, not only in helping patient but in protecting the attendants.  
For promoting the comfort of sick rooms and arresting the progress of contagion, it is probably the most efficient, convenient, and elegant article in use.

Space allows an allusion only to certificates we have received from physicians:

Dr. T. B. WARD, St. Vincent's Hospital, Norfolk, says: "I have used your disinfectant at St. Vincent's Hospital with great satisfaction."

Dr. W. O. BASKERVILLE, Oxford, N. C., "has used Blair's Chloral Thymol in puerperal cases with a great deal of satisfaction; has found it to be an efficient deodorizer and antiseptic, and a good prophylactic against puerperal fever."

Dr. G. W. HARRIS, Richmond, Va., says: "It is a most effective and agreeable preparation for elegant purification of apartments occupied by the sick, and especially serviceable in cases of fever and contagion."

Dr. C. H. CHALKLEY, late Physician to the Small-pox Hospital, says: "In the treatment of small-pox I have used Blair's Chloral Thymol quite extensively. In removing bad odors from the rooms, clothing and person it is excellent. It seems to act chemically upon bad odors, destroying them and not simply disguising them."

Dr. WILLIAM PERRIN NICOLSON, Professor of Anatomy and Dean of the Faculty Southern Medical College, Atlanta, Ga., says: "The preparation (Chloral Thymol) has the advantage of being itself not unpleasant in smell, and it seemed to be of benefit to the skin of my hands. \* \* \* Again, I repeat that I know of nothing that has so well served to overcome the odor of dissecting hands as your prophylactic and disinfectant."

From HUNTER MCGUIRE, M. D.: "Blair's Chloral Thymol is the best disinfectant that I have ever used."

Dr. JOHN R. WHEAT, Medical Superintendent Retreat for the Sick, Richmond, Va., says: "As a prophylactic in epidemic contagiums I believe it to be of very great value, not only in protecting attendants (nurse and doctor), but in the treatment of the disease and arresting its ravages. I used it in the fever ward with three well-marked cases of typhoid, and I believe with decided effect."

Dr. JACOB MICHAUX, of Richmond, says: "I have used Blair's Chloral Thymol Disinfectant in all the cases of scarlet fever treated within the last year, and I have treated a good many, and have not had a second case to occur in any of the families."

**PURCELL, LADD & CO., - Richmond, Va.**

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# WOLF-TRAP WATER.

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## DIURETIC, ANTI-DYSPEPTIC, APERIENT.

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The attention of the Medical Faculty is called to this Water and the Testimonials published below. It is offered to the public in the full confidence that it will be found a valuable remedial agent in the class of diseases which its analysis indicates. The low price at which we have placed it upon the market brings its use within the reach of all classes of patients.

### PRICE, 25 Cents per Gallon.

**PACKAGES EXTRA**, as follows, viz.: Patent Boxed Demijohns, packed, ready for shipment—1 gallon, 85 cents; 2 gallons, \$1.15; 3 gallons, \$1.50; 5 gallons, \$1.80.

The water will be supplied to consumers, who furnish their vessels, as heretofore, but they must send them properly packed, otherwise they will be charged for packing.

Of all the Lithia Waters found in Virginia, none yield more satisfactory therapeutic results than the "Wolf-Trap," supplied by Purcell, Ladd & Co. Its diuretic properties are greater by half than any other known to me. It is a most valuable agent in the treatment of Dyspepsia, Albuminuria, and all forms of Kidney and Bladder derangements. Only yesterday a lady told me that when suffering from "flatulence after eating," a single glassful would relieve her like magic.

GEORGE ROSS, M. D.,

June 1, 1881.

701 East Franklin street, Richmond, Va.

*Richmond, Va., June 30th, 1881.*

Having used the "Wolf-Trap" Water freely with my patients and in my family, I desire to place on record my appreciation of its marked virtues in digestive troubles and affections of the kidneys. Among the many cases I might quote, I recall that of the poor patient, Simon Gladman, who was suffering from cancerous disease of the stomach, and whose praises of the Water were loud and repeated, as it soothed his suffering and prolonged his life—enabling him to take and retain nourishment, which, without it, would be rejected by the stomach at once.

Very respectfully,

JOHN KNOX, M. D.

Messrs. PURCELL, LADD & CO.: Dear Sirs,—In response to your inquiry, I would state that I have used the "Wolf-Trap" Lithia Water a great deal, and esteem it very highly in dyspeptic troubles. It is also a fine diuretic, especially in cases of irritation of the bladder from sympathy with uterine or rectal troubles.

I am, very truly, yours, &c.,

J. N. UPSHUR, M. D.,

615 Franklin street, Richmond, Va.

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## PURCELL, LADD & CO.,

### Agents for Virginia Springs Water.

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